

Notice of Allowability

Application No.

10/540,891

Examiner

JESSICA ROBERTS

Applicant(s)

CHO ET AL.

Art Unit

2621

- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 06/03/2010.
2. ☒ The allowed claim(s) is/are 1,3-17,19-25,27,28 and 30-46.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date 08/04/2010.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

/Marsha D. Banks-Harold/
Supervisory Patent Examiner, Art Unit 2621

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Brain Hameder, Reg. No. 45,613 on August 4th, 2010.

An examiner's amendment to the record appears below. Should the changes and/or additions be acceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Brian Hameder, Reg. No. 45,613 on August 4th, 2010.

The application has been amended as follows:

In the claims:

Claim 1 is amended to read as follows:

(c) encoding the horizontal disparity map and outputting a quantized horizontal disparity map based on the pixel-based horizontal disparity map and a motion vector;
and (d) performing variable length encoding on the quantized video object, the motion vector, and the quantized horizontal disparity map, and outputting the quantized video object, the motion vector, and the quantized horizontal disparity map on which the variable length coding is performed as a single stream.

Cancel claim 2.

Claim 5 is amended to read as follows:

(a) receiving an encoding stream, and outputting quantized data of a video object of the first image, a motion vector, and quantized data of a horizontal disparity map by performing variable length decoding on said encoding stream;

Claim 7 is amended to read as follows:

(g) performing a residual process on the pixel value of the second image and the pixel value of the disparity-compensated second image output in (f) to output luminance residual texture, and encoding the luminance residual to output quantized luminance residual texture; and (h) performing variable length encoding on the quantized video object, the motion vector, the quantized horizontal disparity map, and the quantized luminance residual texture, and outputting the quantized video object, the motion vector, the quantized horizontal disparity map, and the quantized luminance residual texture on which the variable length coding is performed as a single stream.

Cancel claim 8.

Claim 14 is amended to read as follows:

(a) receiving an encoding stream, and outputting quantized data of a video object of the first image, a motion vector, quantized data of a horizontal disparity map, and quantized data of luminance residual texture by performing variable length decoding on said encoding stream.

Claim 17 is amended to read as follows:

(i) performing a residual process on the pixel value of the second image and the pixel value of the disparity-compensated second image output in (h) to output luminance residual texture, and encoding the luminance residual texture to output quantized luminance residual texture; and (j) performing variable length encoding on the quantized video object, the motion vector, the quantized horizontal disparity map, the quantized vertical disparity map, and the quantized luminance residual texture, and outputting the quantized video object, the motion vector, the quantized horizontal map, the quantized vertical disparity map, and the quantized luminance residual texture on which the variable length encoding is performed as a single stream.

Cancel claim 18.

Claim 23 is amended to read as follows:

(a) receiving an encoding stream, and outputting quantized video data of a video object of the first image, a motion vector, quantized data of a horizontal disparity map, quantized data of a vertical disparity map, and quantized data of luminance residual texture by performing variable length decoding on the encoding stream.

Claim 25 is amended to read as follows:

An auxiliary component encoder for encoding the horizontal disparity map and outputting a quantized horizontal disparity map based on the pixel-based horizontal disparity map output by the disparity estimator and a motion vector output by the video object encoder; and a variable length encoder for performing variable length encoding on the quantized video object, the motion vector, and the quantized horizontal disparity map, and outputting the quantized video object, the motion vector and the quantized

horizontal disparity map on which the variable length coding is performed as a single stream.

Cancel claim 26.

Claim 27 is amended to read as follows:

A variable length decoder for receiving an encoding stream, and performing variable length decoding on said encoding stream to output quantized data of video object of the first image, a motion vector, and quantized data of a horizontal disparity map;

Claim 28 is amended to read as follows:

a second auxiliary component encoder for performing a residual process on the pixel value of the second image and the pixel value of the disparity-compensated second image output by the disparity compensator to output luminance residual texture, and encoding the luminance residual texture to output quantized luminance residual texture; and a variable length encoder for performing variable length encoding on the quantized video object, the motion vector, the quantized horizontal disparity map, and the quantized luminance residual texture, and outputting the quantize video object, the motion vector, the quantized horizontal disparity map, and the quantized luminance residual texture on which the variable length coding is performed as a single stream.

Cancel claim 29.

Claim 32 is amended to read as follows:

32. The encoder of claim 31, wherein the variable length encoder performing the variable length encoding on the quantized chrominance residual texture in addition to

the quantized video object, the motion vector, the quantized horizontal disparity map, and the quantized luminance residual texture, and outputting the quantized video object, the motion vector the quantized horizontal disparity map, the quantized luminance residual texture, and the quantized chrominance residual texture on which the variable length coding is performed as the single stream.

Claim 35 is amended to read as follows:

35. The encoder of claim 34, wherein the variable length encoder performs the variable length encoding on the quantized vertical disparity map in addition to the quantized video object, the motion vector, the quantized horizontal disparity map, and the quantized luminance residual texture, and outputting the quantized video object, the motion vector, the quantized horizontal disparity map, the quantized vertical disparity map, and the quantized luminance residual texture on which the variable length coding is performed as the single stream.

Claim 38 is amended to read as follows:

38. The encoder of claim 37, wherein the variable length encoder performs the variable length encoding on the quantized chrominance residual texture in addition to the quantized video object, the motion vector, the quantized horizontal disparity map, the quantized vertical disparity map, and the quantized luminance residual texture, and outputting the quantized video object, the motion vector, the quantized horizontal disparity map, the quantized vertical disparity map, the quantized luminance residual texture, and the quantized chrominance residual texture on which the variable length coding is performed as the single stream.

Claim 41 is amended to read as follows:

41. A decoder for stereoscopic video including first and second images,
comprising:

a variable length decoder for receiving an encoding stream, and perform variable length decoding on said encoding stream to output quantized data

Cancel claim 47.

Cancel claim 48.

2. The following is an examiner's statement of reasons for allowance: The present invention as claimed involves a method for encoding stereoscopic video wherein the novel features includes to perform variable length encoding on the quantized video object, the motion vector, and the quantized horizontal disparity map, and outputting the quantized video object, the motion vector, and the quantized horizontal disparity map on which the variable length coding is performed as a single stream.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Amendment

3. The declaration under 37 CFR 1.132 filed 06/03/2010 is sufficient to overcome the rejection of claims 1-48 based upon the International Organization for

Standardisation Organsaiation International De Normalisation ISO/IEC
JTC1/C29/WG11 Coding of Moving Pictures and Audio (ISO) reference.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JESSICA ROBERTS whose telephone number is (571)270-1821. The examiner can normally be reached on 7:30-5:00 EST Monday-Friday, Alt Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha D. Banks-Harold can be reached on (571) 272-7905. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Marsha D. Banks-Harold/

Supervisory Patent Examiner, Art Unit 2621

/Jessica Roberts/

Examiner, Art Unit 2621